

II. AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

CLAIMS:

1 – 32. (Cancelled).

33. (Currently Amended) A fluid wellbore spacer composition comprising:

~~an effective amount of~~ a zeolite selected from the group consisting of clinoptilolite, analcime, bikitaite, brewsterite, chabazite, faujasite, harmotome, heulandite, laumontite, mesolite, natrolite, paulingite, phillipsite, scolecite, stellerite, stilbite, and thomsonite ~~such that the fluid composition has at least one spacer fluid activity selected from the group consisting of solids removal from a wellbore, fluid displacement from a wellbore and physical separation of chemically incompatible fluids in a wellbore;~~

a polymer present from about 0 to 6% by weight of dry materials selected from the group consisting of hydroxyethylcellulose, cellulose, carboxyethylcellulose, carboxymethylcellulose, carboxymethylhydroxyethylcellulose, hydroxypropylcellulose, methylhydroxypropylcellulose, methylcellulose, ethylcellulose, propylcellulose, ethylcarboxymethylcellulose, methylethylcellulose, hydroxypropylmethylcellulose, starch, guar gum, locust bean gum, tara, konjak, tamarind, karaya gum, welan gum, xanthan gum, galactomannan gums, succinoglycan gums, scleroglucan gums, tragacanth gum, arabic gum, ghatti gum, tamarind gum, carrageenan, carboxymethyl guar, hydroxypropyl guar, carboxymethylhydroxypropyl guar, polyacrylate, polymethacrylate, polyacrylamide, maleic anhydride, methylvinyl ether copolymers, polyvinyl alcohol, and polyvinylpyrrolidone; and

a carrier fluid.

Claims 34 – 39. (Cancelled).

40. (Currently Amended) The wellbore spacer fluid composition of claim 33, wherein the zeolite is selected from the group consisting of analcime, chabazite, clinoptilolite, heulandite, and natrolite.

41. (Currently Amended) The wellbore spacer fluid composition of claim 33, ~~wherein the fluid composition is prepared by combining a dry mix and a carrier fluid, and~~ wherein the dry mix comprises zeolite is present from about 5 to 90% by weight of ~~the zeolite~~ dry materials.

42. (Currently Amended) The wellbore spacer fluid composition of claim 33, ~~wherein the fluid composition is prepared by combining a dry mix and a carrier fluid, and~~ wherein the dry mix comprises zeolite is present from about 60 to 70% by weight of ~~the zeolite~~ dry materials.

43. (Currently Amended) The wellbore spacer fluid composition of claim 33, wherein the carrier fluid comprises a fluid selected from the group consisting of an aqueous fluid, hydrocarbon-based liquids, emulsions, acids and mixtures thereof.

44. (Currently Amended) The wellbore spacer fluid composition of claim 43, wherein the carrier fluid comprises water.

45. (Currently Amended) The wellbore spacer fluid composition of claim 33, wherein the carrier fluid comprises from about 45 to 95% by volume of the fluid composition.

46. (Currently Amended) The wellbore spacer fluid composition of claim 33, wherein the carrier fluid comprises from about 65 to 75% by volume of the fluid composition.

47. (Currently Amended) The wellbore spacer fluid composition of claim 33 further comprising an additive selected from the group consisting of diatomaceous earth and clay.

Claim 48. (Cancelled).

49. (Currently Amended) The wellbore spacer fluid composition of claim 47 wherein the clay is selected from the group consisting of kaolinites, montmorillonite, bentonite, hydrous micas, attapulgite, sepiolite, and laponite.

Claims 50 – 52. (Cancelled).

53. (Currently Amended) The wellbore spacer fluid composition of claim 33, wherein the polymer is selected from the group consisting of hydroxyethylcellulose, carboxymethylhydroxyethylcellulose and guar gum.

54. (Currently Amended) The wellbore spacer fluid composition of claim 33, wherein the polymer comprises hydroxyethylcellulose.

55. (Currently Amended) The wellbore spacer fluid composition of claim 33, wherein the polymer is selected from the group consisting of welan gum, xanthan gum, galactomannan gums, succinoglycan gums, scleroglucan gums, and cellulose and its derivatives.

Claims 56 – 57. (Cancelled).

58. (Currently Amended) The wellbore spacer fluid composition of claim 33 further comprising a dispersant selected from the group consisting of sulfonated styrene maleic anhydride copolymer, sulfonated vinyltoluene maleic anhydride copolymer, sodium naphthalene sulfonate condensed with formaldehyde, sulfonated acetone condensed with formaldehyde, lignosulfonates and interpolymers of acrylic acid, allyloxybenzene sulfonate, allyl sulfonate and non-ionic monomers.

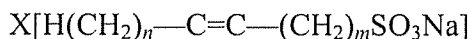
Claims 59 – 60. (Cancelled).

61. (Currently Amended) The wellbore spacer fluid composition of claim 33, further comprising a surfactant selected from the group consisting of nonylphenol ethoxylates, alcohol

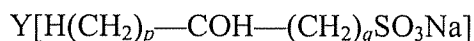
ethoxylates, sugar lipids, α -olefinsulfonates, alkylpolyglycosides, alcohol sulfates, salts of ethoxylated alcohol sulfates, alkyl amidopropyl dimethylamine oxides and alkene amidopropyl dimethylamine oxides.

62. (Currently Amended) The wellbore spacer fluid composition of claim 61, wherein the surfactant is selected from the group consisting of:

- (a) a sodium salt of α -olefinic sulfonic acid which is a mixture of compounds of the formulas:



and



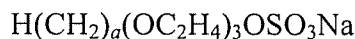
wherein:

n and m are individually integers in the range of from about 6 to about 16;

p and q are individually integers in the range of from about 7 to about 17; and

X and Y are fractions with the sum of X and Y being 1;

- (b) a composition having the formula:

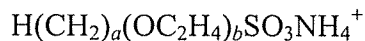


wherein:

a is an integer in the range of from about 6 to about 10;

- (c) oxyalkylated sulfonate;

- (d) an alcohol ether sulfonate of the formula:



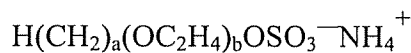
wherein:

a is an integer in the range of from about 6 to about 10; and

b is an integer in the range of from about 3 to about 10;

- (e) cocoamine betaine;

- (f) an ethoxylated alcohol ether sulfate of the formula:



wherein a is an integer in the range of from about 6 to about 10 and b is an integer in the range of from about 3 to about 10;

(g) an alkyl or alkene amidopropyl betaine having the formula:



wherein R is a radical selected from the group of decyl, cocoyl, lauryl, cetyl and oleyl;
and

(h) an alkyl or alkene amidopropyl dimethylamine oxide surfactant having the formula:



wherein R is a radical selected from the group of decyl, cocoyl, lauryl, cetyl and oleyl.

Claims 63 – 64. (Cancelled).

65. (Currently Amended) The wellbore spacer fluid composition of claim 33 further comprising a weighting material selected from the group consisting of barite, hematite, manganese tetraoxide, ilmenite and calcium carbonate.

Claims 66 – 105. (Cancelled).

106. (Currently Amended) A wellbore spacer fluid composition comprising:

~~an effective amount of~~ a zeolite selected from the group consisting of clinoptilolite, analcime, bikitaite, brewsterite, chabazite, faujasite, harmotome, heulandite, laumontite, mesolite, natrolite, paulingite, phillipsite, scolecite, stellerite, stilbite, and thomsonite ~~such that the fluid composition has at least one spacer fluid activity selected from the group consisting of solids removal from a wellbore, fluid displacement from a wellbore and physical separation of chemically incompatible fluids in a wellbore;~~

a dispersant present from about 1 to 18% by weight of dry materials selected from the group consisting of sodium naphthalene sulfonate condensed with formaldehyde, sulfonated styrene maleic anhydride copolymer, sulfonated vinyltoluene maleic anhydride copolymer,

sulfonated acetone condensed with formaldehyde, lignosulfonates and interpolymers of acrylic acid, allyloxybenzene sulfonate, allyl sulfonate and non-ionic monomers; and
a carrier fluid.

Claims 107 – 109. (Cancelled).

110. (Currently Amended) The wellbore spacer fluid composition of claim 106, wherein the zeolite is selected from the group consisting of analcime, chabazite, clinoptilolite, heulandite, and natrolite.

111. (Currently Amended) The wellbore spacer fluid composition of claim 106, ~~wherein the fluid composition is prepared by combining a dry mix and a carrier fluid, and~~ wherein the ~~dry mix comprises~~ zeolite is present from about 5 to 90% by weight of ~~the zeolite dry materials~~.

112. (Currently Amended) The wellbore spacer fluid composition of claim 106, ~~wherein the fluid composition is prepared by combining a dry mix and a carrier fluid, and~~ wherein the ~~dry mix comprises~~ zeolite is present from about 60 to 70% by weight of ~~the zeolite dry materials~~.

113. (Currently Amended) The wellbore spacer fluid composition of claim 106, wherein the carrier fluid comprises a fluid selected from the group consisting of an aqueous fluid, hydrocarbon-based liquids, emulsions, acids and mixtures thereof.

114. (Currently Amended) The wellbore spacer fluid composition of claim 106, wherein the carrier fluid comprises water.

115. (Currently Amended) The wellbore spacer fluid composition of claim 106, further comprising an additive selected from the group consisting of diatomaceous earth and clay.

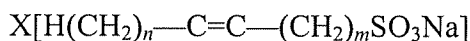
116. (Currently Amended) The wellbore spacer fluid composition of claim 115 wherein the clay is selected from the group consisting of kaolinites, montmorillonite, bentonite, hydrous micas, attapulgite, sepiolite, and laponite.

117. (Currently Amended) The wellbore spacer fluid composition of claim 106 further comprising a polymer selected from the group consisting of hydroxyethylcellulose, carboxymethylhydroxyethylcellulose, guar gum, welan gum, xanthan gum, galactomannan gums, succinoglycan gums, scleroglucan gums, and cellulose.

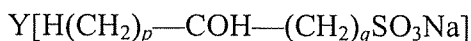
118. (Currently Amended) The wellbore spacer fluid composition of claim 106 further comprising a surfactant selected from the group consisting of nonylphenol ethoxylates, alcohol ethoxylates, sugar lipids, α -olefinsulfonates, alkylpolyglycosides, alcohol sulfates, salts of ethoxylated alcohol sulfates, alkyl amidopropyl dimethylamine oxides and alkene amidopropyl dimethylamine oxides.

119. (Currently Amended) The wellbore spacer fluid composition of claim 118, wherein the surfactant is selected from the group consisting of:

- (a) a sodium salt of α -olefinic sulfonic acid which is a mixture of compounds of the formulas:



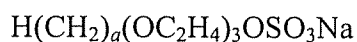
and



wherein:

- n and m are individually integers in the range of from about 6 to about 16;
- p and q are individually integers in the range of from about 7 to about 17; and
- X and Y are fractions with the sum of X and Y being 1;

- (b) a composition having the formula:



wherein:

- a is an integer in the range of from about 6 to about 10;

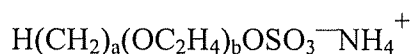
- (c) oxyalkylated sulfonate;
- (d) an alcohol ether sulfonate of the formula:



wherein:

- a is an integer in the range of from about 6 to about 10; and
- b is an integer in the range of from about 3 to about 10;

- (e) cocoamine betaine;
- (f) an ethoxylated alcohol ether sulfate of the formula:



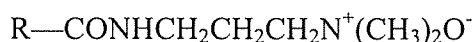
wherein a is an integer in the range of from about 6 to about 10 and b is an integer in the range of from about 3 to about 10;

- (g) an alkyl or alkene amidopropyl betaine having the formula:



wherein R is a radical selected from the group of decyl, cocoyl, lauryl, cetyl and oleyl;
and

- (h) an alkyl or alkene amidopropyl dimethylamine oxide surfactant having the formula:



wherein R is a radical selected from the group of decyl, cocoyl, lauryl, cetyl and oleyl.

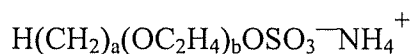
120. (Currently Amended) The wellbore spacer fluid composition of claim 106 further comprising a weighting material selected from the group consisting of barite, hematite, manganese tetraoxide, ilmenite and calcium carbonate.

121. (Currently Amended) A wellbore spacer fluid composition comprising:

~~an effective amount of a zeolite selected from the group consisting of clinoptilolite, analcime, bikitaite, brewsterite, chabazite, faujasite, harmotome, heulandite, laumontite, mesolite, natrolite, paulingite, phillipsite, scolecite, stellerite, stilbite, and thomsonite such that the fluid composition has at least one spacer fluid activity selected from the group consisting of solids removal from a wellbore, fluid displacement from a wellbore and physical separation of chemically incompatible fluids in a wellbore;~~

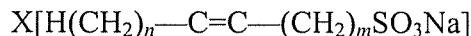
a surfactant selected from the group consisting of:

(a) an ethoxylated alcohol ether sulfate of the formula:

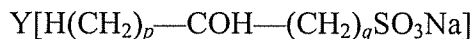


wherein a is an integer in the range of from about 6 to about 10 and b is an integer in the range of from about 3 to about 10;

(b) a sodium salt of α -olefinic sulfonic acid which is a mixture of compounds of the formulas:



and



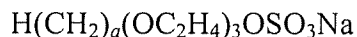
wherein:

n and m are individually integers in the range of from about 6 to about 16;

p and q are individually integers in the range of from about 7 to about 17; and

X and Y are fractions with the sum of X and Y being 1;

(c) a composition having the formula:

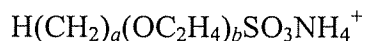


wherein:

a is an integer in the range of from about 6 to about 10;

(d) oxyalkylated sulfonate;

(e) an alcohol ether sulfonate of the formula:



wherein:

a is an integer in the range of from about 6 to about 10; and

b is an integer in the range of from about 3 to about 10;

(f) cocoamine betaine;

(g) an alkyl or alkene amidopropyl betaine having the formula:



wherein R is a radical selected from the group of decyl, cocoyl, lauryl, cetyl and oleyl;

and

(h) an alkyl or alkene amidopropyl dimethylamine oxide surfactant having the formula:



wherein R is a radical selected from the group of decyl, cocoyl, lauryl, cetyl and oleyl;

and

a carrier fluid.

Claims 122 – 124. (Cancelled).

125. (Currently Amended) The wellbore spacer fluid composition of claim 121, wherein the zeolite is selected from the group consisting of analcime, chabazite, clinoptilolite, heulandite, and natrolite.

126. (Currently Amended) The wellbore spacer fluid composition of claim 121, ~~wherein the fluid composition is prepared by combining a dry mix and a carrier fluid, and wherein the dry mix comprises~~ zeolite is present from about 5 to 90% by weight of the zeolite dry materials.

127. (Currently Amended) The wellbore spacer fluid composition of claim 121, ~~wherein the fluid composition is prepared by combining a dry mix and a carrier fluid, and wherein the dry mix comprises~~ zeolite is present from about 60 to 70% by weight of the zeolite dry materials.

128. (Currently Amended) The wellbore spacer fluid composition of claim 121, wherein the carrier fluid comprises a fluid selected from the group consisting of an aqueous fluid, hydrocarbon-based liquids, emulsions, acids and mixtures thereof.

129. (Currently Amended) The wellbore spacer fluid composition of claim 121, wherein the carrier fluid comprises water.

130. (Currently Amended) The wellbore spacer fluid composition of claim 121 further comprising an additive selected from the group consisting of diatomaceous earth and clay.

131. (Currently Amended) The wellbore spacer fluid composition of claim 130 wherein the clay is selected from the group consisting of kaolinites, montmorillonite, bentonite, hydrous micas, attapulgite, sepiolite, and laponite.

132. (Currently Amended) The wellbore spacer fluid composition of claim 121 further comprising a polymer selected from the group consisting of hydroxyethylcellulose, carboxymethylhydroxyethylcellulose, guar gum, welan gum, xanthan gum, galactomannan gums, succinoglycan gums, scleroglucan gums, and cellulose.

Claim 133. (Cancelled).

134. (Currently Amended) The wellbore spacer fluid composition of claim 121 further comprising a weighting material selected from the group consisting of barite, hematite, manganese tetraoxide, ilmenite and calcium carbonate.

135. (Currently Amended) The wellbore spacer fluid composition of claim 33, wherein the ~~fluid~~ composition has a 300/3 ratio of from 2 to 6.

136. (Currently Amended) The wellbore spacer fluid composition of claim 106, wherein the ~~fluid~~ composition has a 300/3 ratio of from 2 to 6.

137. (Currently Amended) The wellbore spacer ~~fluid~~ composition of claim 121, wherein the ~~fluid~~ composition has a 300/3 ratio of from 2 to 6.